

TOWN OF NATICK
MASSACHUSETTS

REPORT OF THE

**TOWN MEETING ELECTRONIC VOTING
STUDY COMMITTEE**



TO THE
SPRING 2015 ANNUAL
TOWN MEETING

Electronic Voting Study Committee

Report to Spring 2015 Annual Town Meeting

Introduction

Electronic voting in town meetings produces an accurate, instant vote count and a record of how each member voted. Results from an electronic vote may be immediately displayed and may be easily published online for public review.

The representative town meetings in Arlington, Brookline, Framingham, Chelmsford, Lexington, and Billerica use electronic voting.

Wayland uses electronic voting for open town meeting, with hundreds of people voting.

This report considers the question, “Should Natick Town Meeting adopt electronic voting?” and contains our findings and recommendations.

Table of Contents

Summary of the Committee’s Work	3
How Electronic Voting Works	4
Benefits and Concerns of Electronic Voting	5
Financial Costs	8
Committee Recommendations	9
Appendices	10

Summary of Recommendations

Amend the Town Bylaws to require, when such technology is available, the use of an electronic tally and display device for voting in Town Meeting, subject to policies and procedures determined in the bylaws and by the Town Moderator.

Appropriate funds to acquire or lease an electronic tally and display system for use starting with the Fall 2015 Annual Town Meeting.

Extend the Committee’s charge to aid in procurement, document procedures and create a handbook, and report on Town Meeting’s experience.

Summary of Conclusions

Electronic voting in Town Meeting would:

Improve voting methods by providing greater accuracy, preventing unauthorized voting, and allowing faster roll-call votes.

Introduce potential concerns about ease of use, security, and illegal proxy voting. However, Town Meeting can take steps to meet these concerns.

Incur financial costs and operating burdens that are reasonable and worth the potential benefits, in the view of the Committee.

Town Meeting, however, must ultimately make this determination.

Employ technologies that provide sufficient security and operating features to ensure the integrity of the vote and ease of use.

Increase accountability to constituents by creating a record of votes of individual Town Meeting members.

Summary of the Committee's Work

The committee convened 10 times from July 2014 through March 2015. We addressed the following major questions:

- Is available technology feasible— secure, reliable, and easy to use?
- What does it cost to obtain and operate?
- What are the potential benefits and potential concerns?
- Should Natick Town Meeting adopt electronic voting, and what would be the best way to implement it, if so?

To address these questions, we:

- Studied video of other Massachusetts Town Meetings using electronic voting;
- Consulted officials, and studied relevant reports and bylaws from the other towns;
- Interviewed key Town of Natick officials and personnel;
- Heard an informational presentation from the vendor serving most towns in the Commonwealth;
- Arranged for a demonstration of the technology to the Fall 2014 Annual Town Meeting;
- Explored benefits and costs for various methods of using electronic voting in Natick's Town Meeting, and considered potential bylaw changes to permit it.

Consultations

The Committee consulted the Town Administrator and the Procurement Officer to ensure that funds were available and that all relevant laws are followed.

We incorporated feedback from Town Counsel into the wording of our proposed bylaw amendments.

Electronic Voting Study Committee

Natick Town Meeting created the Electronic Voting Study Committee at the Spring 2014 Annual Town Meeting, to study and make recommendations on the use of this technology for Town Meeting.

The committee comprises both Town Meeting members and community members who are technology professionals: Rich Sidney (Chair), P.J. McNealy (Vice-Chair), Harriet Merkowitz (Clerk), Joseph Sinko, Paul McKinley, Patrick Hayes.

Town Moderator Frank Foss and Town Clerk Diane Packer were non-voting members.

Recommendations

As a result of our study, the Committee voted to submit warrant articles for bylaw amendments and appropriations that would enable electronic voting, and to extend the charge of the committee to aid in procurement and to document procedures for Town Meeting. The Board of Selectmen, Finance Committee and Town Meeting Procedures Committee have voted favorable action on these articles; please see their respective reports to Town Meeting for details.

How Electronic Voting Works

Overview

The electronic-voting systems on the market for small legislative bodies are secure, upgraded versions of audience-response systems common in educational and professional-meeting settings. These systems use wireless, TV-remote style handsets to transmit each person's vote to a central computer for tabulation and display. Versions sold for legislative use have additional features.

Voting

Each town Meeting member is issued a wireless handset with a unique ID number. When the Moderator announces that voting is open, each member votes by pressing buttons on his or her handset during the timed voting period, and the signals are securely transmitted via radio frequency to a receiver connected to a voting computer. The voting computer transmits a confirmation of the vote received back to the handset for visual confirmation of the vote. (See "Benefits and Concerns" for a discussion of security.)

Tabulation, Display, and Publishing

The voting computer contains a database of town meeting members and the unique ID of each member's handset, and software to prepare and record the votes. The computer is connected to the projection system in the hall and the cable TV video feed, to display the text of the vote at hand and the subsequent voting results. The total time to prepare, launch and tabulate an electronic vote can be as little as one minute, with additional results display time (one to two minutes) if the votes of each Member votes are displayed. If a handset device fails, it can quickly and securely be replaced with a new device. Required vote margins for a simple or $\frac{2}{3}$ majority are automatically tabulated. The computer exports voting results to a standard document format that may easily be published on the town's website.

Procedural Options

Depending on which voting system is selected and which system options are selected, various ways to use electronic voting may be chosen to suit the preference of Town Meeting. For example, voting results may be displayed onscreen as a simple counted tabulation, or as a full report of the individual votes for each Member. It is also possible to choose whether these voting results (in either format) are displayed as they come in during the open voting period, or only after the voting period expires.

**See electronic voting in use in
other Town Meetings:**

<http://votevideos.wordpress.com>

Each of these variations is used across different Massachusetts town meetings that have adopted electronic voting, as can be seen at <http://votevideos.wordpress.com>. This website features excerpted cable access TV video, with explanatory notes.

Management of Handsets

In the practice of other towns now using these systems, voting handsets are distributed to Town Meeting Members as they check in with the Town Clerk's staff. In our discussions with Framingham officials, and supported by the experience of the Town of Arlington's research, handset check-in was rapid and did not cause backups at the door. Handsets are collected each night when members leave; most towns provide bins for rapid mass return and the remotes are later checked in, tested, and re-filed before the next session. Some towns use volunteers to distribute handsets at the beginning and check them back in at the end. All towns use paid personnel, either a town employee or a contractor, to operate the voting computer.

Benefits and Concerns of Electronic Voting

As with the adoption of any new technology, the implementation of electronic voting in Natick Town Meeting would offer benefits relative to current practice, while introducing some new concerns.

Benefits

A properly implemented electronic voting system can deliver tangible benefits to Town Meeting, primarily in increasing public information about Town Meeting proceedings, but also in the efficiency and accuracy of voting. These benefits would increase the accountability of Town Meeting members to the citizens they represent, and may enhance the public's confidence and interest in Town Meeting.

Improvements in Counted Votes

Using electronic voting in place of standing votes provides for a higher degree of accuracy than current practice. Electronic voting is at least as quick as a standing vote and can be faster, depending on how it is implemented. Additionally, Town Meeting could use electronic voting to take more counted votes in place of voice voting without sacrificing significant meeting time. An ad-hoc study of the time required for typical hand votes suggests that use of this technology might save on the order of 10 seconds per vote, and substantially more when a vote is close and a teller vote is avoided.

Protection Against Unauthorized Voting

Because electronic voting systems employ uniquely identified handsets to enter votes, they reduce the potential for inadvertent or intentional votes made by unauthorized individuals, such as non-members who are improperly inside the enclosure on a standing vote, or who contribute to voice votes from the gallery.

Increased Accountability to the Public

The greatest benefit of electronic voting to a representative town meeting is the opportunity to quickly record and publish how individual members voted. Currently, a member-by-member voting record is available only with a time-consuming voice roll call, which is very uncommon.

As a result, constituents rarely know how their elected representatives vote. An electronic voting system would allow Town Meeting to take and publish individually recorded votes with the required accuracy but in dramatically less time.

It is up to Town Meeting and the Moderator to determine which votes would be taken this way, also subject to by-law, but recording and publishing more individual votes, especially on the substantive motions, would substantially increase transparency and accountability in the Town's democratic process, further elevating Town Meeting as a representative legislative body. This change may also encourage Member attendance at Town Meeting, since the presence (or absence) of a Member will be evidenced by the presence (or absence) of a vote from that Member.

Additionally, public access to town-meeting-member voting records for all substantive votes would provide a better-rounded view of a Member's record than is available with our current practice, where constituent awareness of their Members' votes is often limited to the most controversial issues. To the Committee's knowledge, all Massachusetts town meetings now using electronic voting routinely publish individual vote reports to the town website, and they report widespread acceptance of this practice by Town Meeting Members and by the community at large.

Concerns

The Committee addressed the major concerns that are likely to arise when considering the adoption of an electronic voting system for Town Meeting. Where applicable, mitigation approaches for the concerns are discussed. However, Town Meeting must ultimately determine whether the benefits of electronic voting enumerated above outweigh these concerns.

Integrity of the Vote

One of the most significant concerns is whether a selected electronic voting system will provide accurate tallies. Electronic voting systems ensure the integrity of wirelessly collected votes by a number of means, including:

- *Wireless transmission mechanisms* that are designed to continue to provide robust communication in the presence of inadvertent or intended (malicious) radio frequency (RF) interference.
- *Transmission ranges* that are suitable for the size of the meeting hall, ensuring that all transmitted votes will reach the receiver associated with the vote tallying computer system.
- *Authentication*: Linkage of uniquely-formatted voting data transmissions to unique handset devices that are assigned to specific Town Meeting Members, and which are distributed and collected in a controlled manner.
- *Positive real-time feedback* to the handset user acknowledging that a keyed-in yes, no, or abstain vote has been received by the system.
- *Public onscreen display* of voting results, enabling each Town Meeting Member to further confirm the accuracy of his/her own vote.
- *Procedures* put in place to address incorrectly recorded or missed votes detected as

a result of onscreen review, or originating from a failed handset.

Fraud

Of equal concern is whether electronic voting systems open up avenues for fraudulent voting that make them significantly easier to abuse than current non-electronic voting procedures.

The Committee considered the following specific concerns:

- *Use of unauthorized devices:* The handsets used by electronic voting systems are typically commercial off-the-shelf items available for public purchase. However, linkage of specific handsets to specific Town Meeting Members (described above), along with handset distribution controls, effectively prevents potential misuse.
- *Multiple voting:* The electronic voting system is designed to record only one vote per member during each time-limited open voting window, which is generally the last yes, no, or abstain vote entered on a member's handset before the window closes. Thus, a member can change his or her vote during the voting window (typically to correct for an initial error while keying), and only the final corrected vote will be posted.
- *Proxy voting:* Electronic voting systems do not provide direct technical safeguards against proxy voting—a situation where a handset properly registered and checked out to a particular Town Meeting Member might be provided to another person for voting. Proxy voting is not allowed at Town Meeting.

The Committee recommends deterring proxy voting by public scrutiny. The bylaw we recommend provides for the automatic display of individual Member voting data for all close electronic votes.

It may also be apparent to others in the hall when an individual is using more than one TV-remote style device to vote in such an unauthorized manner. Any such activity would be reported to the Moderator (as, for example, the presence of non-Members within the enclosure would be reported now).

Ease of Use

Adoption of a new voting method risks some initial confusion about use of the technology and related procedural changes. To successfully address this challenge, other towns have conducted training sessions for town-meeting members, created an instructional video on system use, and run test votes prior to a meeting's actual votes. The Committee anticipates employing similar strategies for Natick Town Meeting should electronic voting be adopted. In addition, the Committee suggests creating a simple Handbook for use that could be included in the Finance Committee's Recommendation Book at each Annual Town Meeting. Each of the other town meetings currently using electronic voting reported rapid, widespread acceptance of the systems by their members. At the equipment demonstration, the Committee observed that members were able to easily use the devices and seemed comfortable using them.

Accessibility for People with Disabilities

Appropriate accommodation would be made for any Town Meeting members with physical disabilities that impeded use of an electronic voting handset or review of voting result screens. The specific accommodation required would depend on the needs of the individual. Other towns using e-voting in Town Meeting have adopted policies to assign an official aide to individuals

requiring assistance in using e-voting equipment, such as telling the voter which button has been pushed, reading out the handset's visual feedback, and reading the Member's vote when it is displayed in the hall. If Town Meeting votes to adopt electronic voting, the Committee will consult the Town of Natick Commission on Disability to assist in evaluating voting equipment and to recommend appropriate accommodation policies to the Moderator.

System Failures

A deployed electronic voting system, like any other computer-based technology, can fail at a critical time. While outages should be very rare, the proposed bylaw amendments fully permit use of the same non-electronic voting methods in use today, in the event of a technical problem.

Vendor and Technology Investigation

Our inquiry into specific electronic voting systems on the market was limited to establishing the feasibility and cost of these products. The Committee determined that recommending a specific vendor at this stage would be premature; should Town Meeting vote to authorize and fund electronic voting, the Committee will work with the Town Administrator, the Procurement Officer, and in consultation with whatever additional departments the Town Administration deems appropriate to perform a robust vendor evaluation and procurement process.

Our investigation focused on security, desired operating features, reliability, technical compatibilities, cost, and the general parameters for purchasing or leasing a system. To determine that adequate systems are available, we took the following steps:

- Observed electronic voting in action in other local communities having representative town meetings, and spoke with Town Meeting or town officials about their experience with the systems.
- Studied reports from electronic voting study and vendor selection committees from other town meetings in Massachusetts, most of whom spent several years evaluating the technology.

Based on this investigation, the Committee concludes that the available technologies are secure, reliable, and have the necessary features for effective use in Town Meeting voting.

Financial Costs

Procuring and operating an electronic voting system will require a financial investment by the town, with both up-front and recurring costs. Electronic voting systems currently on the market are available for purchase or rental.

Under either scenario below, it is likely that we would use a small group of volunteers and/or pages to distribute and collect the handsets, as is done in most of the other towns now using electronic voting.

Lease

Leasing of this system from the premiere vendor would cost about \$12,000 per year for 16 sessions of Town Meeting. Additional sessions would cost about \$300 per night. Unused sessions

would result in a refund to the Town. This cost includes vendor-supplied personnel to operate and maintain the equipment. Annual operating costs would be close to zero. The Town would supply personnel, likely Town Meeting Pages, to distribute and collect the handsets, at minimal cost to the taxpayers.

Purchase

Buying the premiere available system, which has the most robust voting confirmation and display options, would cost between \$13,000 and \$26,000 at current pricing. Town IT personnel would operate and maintain the equipment. Projected annual operating cost is about \$2,500, primarily for personnel time, handset batteries, and software support, maintenance and upgrades. Note that, if the system is purchased, Town personnel will be required to operate the equipment, which may result in additional overtime costs, above and beyond the annual maintenance and supplies. Each vendor offers training at an additional estimated cost of approximately \$1,500.

Committee Recommendations

The Committee unanimously supports adopting electronic voting in Natick's representative Town Meeting. Based on our study, we believe the benefit of greater accountability and transparency to constituents is well worth the modest costs, and that the risks are manageable.

Amend the Bylaws to Permit Electronic Voting

The Committee's recommended bylaw amendment (Appendix B) has been adopted in total by the Board of Selectmen and the Finance Committee as the main motion for Article 24. The recommended changes would require the use of electronic voting equipment in Town Meeting, when it is funded, acquired or leased and operational.

The proposed bylaw amendment:

- Requires the use of electronic voting equipment for all votes, when the technology is available.
- Allows all current, non-electronic voting procedures (voice vote, standing count, and voice roll call) to be used when electronic voting equipment fails, or is otherwise not available.
- Otherwise leaves discretion to the Moderator to set and adjust operating procedures for votes taken with electronic equipment.

Appropriate Funds for Electronic Voting Equipment

Article 25 would appropriate funds for electronic voting equipment. At this time, the Committee believes that contracting with a vendor to provide both the equipment and personnel to operate the equipment (essentially, a lease plus services) is the best long-term solution for Natick, because it would provide the most trouble-free operation of the equipment, with no additional Town personnel to manage and operate this specialized equipment. Should Town Meeting vote to authorize and fund electronic voting, the Town will rigorously re-evaluate the total cost of ownership and other considerations in evaluating purchase and rental alternatives.

The \$15,000 request for an appropriation will allow the acquisition of equipment and operational services for more than 16 sessions of Town Meeting. Proposals we have already

seen provide for 16 sessions, with a per-diem rate for additional sessions or additional Town Meetings, if needed. The Town would only be charged for sessions actually utilized, with a refund if the contracted services were not required. These funds would appear in a separate appropriation line of the Town Clerk's budget, and would be restricted to this use. Any unused funds would fall to Free Cash.

Appendices

A. Questions and Answers

B. Proposed Bylaw Amendments

Questions & Answers About Electronic Voting at Town Meeting

Why does the Town Meeting Electronic Voting Study Committee recommend using an electronic-voting system to count votes at Town Meeting? Is the current system flawed?

The Committee feels such a system would provide greater accountability and communication to Natick residents in the form of a record of votes at Town Meeting. That, rather than time savings, is the principal benefit. The Committee emphatically does not believe the way we have been doing business for a hundred years is broken. Rather, we feel that this technology can fulfill even better the democratic promise of the Town Meeting form of government.

Wouldn't electronic voting also save time?

It might, depending on how it is used. However, the operation of the system is not instantaneous. Except for roll-call votes, which take up to 40 minutes under the current system, voting will probably take roughly the same amount or very slightly less time.

How would Town Meeting members vote electronically?

Members would be issued a voting handset, like a TV remote, which they check in and return each night. They would vote by pressing "yes," "no," or a third button corresponding to "abstain" or "present."

Each handset would be numbered and assigned to the member who checked it out. Members would return the handsets as they leave the meeting for the night.

What forms would electronic voting take?

The proposed bylaw provides for the use of electronic voting technology in place of hand votes.

All other rules about roll-call votes and questioning the vote would continue to apply, as they currently exist in the Town's By-law and Town Meeting Time.

Who would decide when to use electronic voting?

Electronic Voting would be used by default, unless Town Meeting votes otherwise.

Are there other benefits of electronic voting?

Yes. Electronic voting eliminates or mitigates several possible sources of fraud or error, such as nonmembers sitting in the enclosure and voting. Only handset votes would be counted.

Are there any disadvantages of electronic voting?

The primary disadvantage is the cost of leasing or owning and operating the system. Also, the practice of voting using remote handsets introduces the possibility of a new kind of fraud; in the form of illegal proxy voting (e.g. a member gives their handset to another member to illicitly delegate their vote).

Generally, the Committee finds that electronic voting is likely to be more accurate than the voting methods we currently enjoy. Unauthorized voting is not unknown at Town Meeting today when nonmembers enter the enclosure or add their voices to voice votes. Electronic voting avoids the opportunities for these errors.

What about computerized fraud, in which electronic data are deliberately intercepted or altered?

The electronic voting systems in use today are very secure from manipulation. They use dedicated wireless handsets that interact directly with the system, not an internet connection. Data are encrypted, and handsets are assigned to individual voters with each handset accounted for.

Who will decide which system to rent or purchase, if Town Meeting approves the bylaw and the appropriation?

The Town will bid the rental or purchase through its standard procurement process. The Board of Selectmen will award the contract. The Committee will work with the Town Administration and Procurement Officer to prepare a Request for Proposal, evaluate the results and recommend a vendor.

Is this worth the expense?

That's the question for Town Meeting. It's hard to put a price tag on democracy.

Town of Natick, Massachusetts

Natick Town Meeting — Recommended By-Law Amendment

ARTICLE 24

Amend By-Law Article 3: Enable Electronic Voting by Town Meeting

To see whether the Town will vote to amend Article 3 of the Town of Natick By-Laws for the purpose of authorizing the use of electronic voting technology by Town Meeting; or otherwise act thereon.

Motion:

Move that the Town vote to amend Article 3, Section 4 “Voting”, of the Town of Natick By-Laws, by, in the first sentence:

1. In Section 4 delete the first sentence and insert in its place the following sentence:
“Voting by Town Meeting Members shall:
 - a. utilize electronic voting technology, where available; or, if electronic voting technology is not available,
 - b. be by a show of hands or other means as authorized by the Moderator and approved by a two-thirds (2/3) vote of the Town Meeting Members present and voting; or
 - c. be as hereinafter provided.”
2. In Section 4 move the second, third and fourth sentences into a new second paragraph.

So that said section 4 shall read:

“Section 4 Voting

Voting by Town Meeting Members shall:

- a. utilize electronic voting technology, when available; or, if electronic voting technology is not available,
- b. be by a show of hands or other means as authorized by the Moderator and approved by vote of two-thirds (2/3) of the Town Meeting members present and voting; or
- c. be as hereinafter provided.

On matters requiring a two-thirds vote by statute, as authorized under Section 15 of Chapter 39 of the General Laws, a count need not be taken. If the result of a vote by show of hands or any other means is in doubt, or if the result is questioned by seven (7) Town Meeting Members, the Moderator shall appoint tellers who shall count the vote by a show of hands. Upon motion affirmatively voted by two-thirds (2/3) of the Town Meeting Members present and voting, a vote shall be taken by secret ballot.”